

**Appendix B**  
**EXAMS Scenario Input Parameters For Standard Pond**  
 (With modifications for local conditions in Macoupin County IL)

<b>Table B-1.</b> EXAMS II pond geometry and location parameters for standard pond in Macoupin County, IL		
	Littoral	Benthic
Area (AREA)	10000 m <sup>2</sup>	10000 m <sup>2</sup>
Depth (DEPTH)	2 m	0.05 m
Volume (VOL)	20000 m <sup>3</sup>	500 m <sup>3</sup>
Length (LENG)	100 m	100 m
Width (WIDTH)	100 m	100 m

<b>Table B-2.</b> EXAMS II dispersive transport parameters between benthic and littoral layers in each segment for standard pond.			
Parameter	Pond <sup>*</sup>	Stream 1 <sup>**</sup>	Stream 2 <sup>***</sup>
Turbulent Cross-section (XSTUR)	10000 m <sup>2</sup>	300 m <sup>2</sup>	1200 m <sup>2</sup>
Characteristic Length (CHARL)	1.01, 1.025 m	0.275 m	0.275 m
Dispersion Coefficient for Eddy Diffusivity (DSP)	3.0 x 10 <sup>-5</sup>	3.0x 10 <sup>-5</sup>	3.0x 10 <sup>-5</sup>

<sup>\*</sup> JTURB = 1, ITURB = 2; <sup>\*\*</sup> JTURB = 3, ITURB = 4; <sup>\*\*\*</sup> JTURB = 5, ITURB = 6

<b>Table B-3.</b> EXAMS II sediment properties for standard pond.		
	Littoral	Benthic
Suspended Sediment (SUSED)	30 mg L <sup>-1</sup>	
Bulk Density (BULKD)		1.85 g cm <sup>-3</sup>
Per cent Water in Benthic Sediments (PCTWA)		137%
Fraction of Organic Matter (FROC)	0.04	0.04

<b>Table B-4.</b> EXAMS II external environmental parameters for standard pond.	
Precipitation (RAIN)	90 mm · month <sup>-1</sup>
Atmospheric Turbulence (ATURB)	2.00 km
Evaporation Rate (EVAP)	90 mm · month <sup>-1</sup>
Wind Speed (WIND)	1 m · sec <sup>-1</sup>
Air Mass Type (AMASS)	Rural (R)

<b>Table B-5.</b> EXAMS II biological characterization parameters for standard pond.		
Parameter	Limnic	Benthic
Bacterial Plankton Population Density (BACPL)	1 cfu · cm <sup>-3</sup>	
Benthic Bacteria Population Density (BNBAC)		37 cfu · (100 g) <sup>-1</sup>
Bacterial Plankton Biomass (PLMAS)	0.40 mg · L <sup>-1</sup>	
Benthic Bacteria Biomass (BNMAS)		6.0x10 <sup>-3</sup> g · m <sup>-2</sup>

<b>Table B-6. EXAMS water quality parameters for standard pond.</b>	
Parameter	Value
Optical path length distribution factor (DFAC)	1.19
Dissolved organic carbon (DOC)	5 mg ·L <sup>-1</sup>
chlorophylls and pheophytins (CHL)	5x10 <sup>-3</sup> mg ·L <sup>-1</sup>
pH (PH)	7
pOH (POH)	7

<b>Table 7. EXAMS mean monthly water temperatures (TCEL) the standard pond located in Macoupin County, Il.</b>	
Month	Temperature (Celsius)
January	0
February	1.09
March	6.26
April	13.21
May	18.61
June	23.73
July	26.09
August	25.04
September	20.91
October	14.50
November	7.04
December	0.99